

AMENDMENTS TO THE SPECIFICATION

Please replace the sections entitled “BRIEF DESCRIPTION OF THE FIGURES” and “DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS” added by amendment dated October 30, 2006 with the following amended sections:

BRIEF DESCRIPTION OF THE FIGURES

The above and other objects and advantages of this invention will be apparent upon consideration of the following detailed description, taken in conjunction with the accompanying drawings in which like characters refer to like elements throughout and in which:

FIGS. 1A and 1B ~~FIG. 1A~~ depict, respectively, front~~[[,]]~~ and rear ~~and~~ perspective views ~~respectly~~ of a hand-held electrostatic spraying device and ~~multiple~~ replaceable ~~reservoir or cartridge~~ having multiple reservoirs, all made in accordance with a preferred embodiment of the present invention;

FIGS. 2A and 2B ~~and FIG. 2A~~ depict, respectively, top and cross-sectional views of a ~~multiple~~ replaceable ~~reservoir or cartridge~~ having multiple reservoirs, all made in accordance with a preferred embodiment of the present invention;

FIGS. 3A and 3B and ~~FIG. 3A~~ depict, respectively, top and cross-sectional views ~~respectly~~ of an alternate ~~multiple~~ replaceable ~~reservoir or~~ cartridge having multiple reservoirs, all made in accordance with a preferred embodiment of the present invention;

FIGS. 4A and 4B and ~~FIG. 4 A~~ depict, respectively, top and cross-sectional views ~~respectly~~ of an alternate ~~multiple~~ replaceable ~~reservoir or~~ cartridge having multiple reservoirs, all made in accordance with a preferred embodiment of the present invention;

FIGS. 5A and 5B and ~~FIG. 5 A~~ depict, respectively, top and cross-sectional views ~~respectly~~ of an alternate replaceable ~~reservoir or~~ cartridge having a reservoir, all made in accordance with a preferred embodiment of the present invention;

FIGS. 6A and 6B and ~~FIG. 6 A~~ depict, respectively, top and cross-sectional views ~~respectly~~ of an alternate replaceable ~~reservoir or~~ cartridge having a reservoir, all made in accordance with a preferred embodiment of the present invention;

FIGS. 7A and 7B and ~~FIG. 7 A~~ depict, respectively, top and cross-sectional views ~~respectly~~ of an alternate replaceable ~~reservoir or~~ cartridge having a reservoir, all made in accordance with a preferred embodiment of the present invention;

FIGS. 8A and 8B and ~~FIG. 8-A~~ depict, respectively, top and cross-sectional views ~~respectly~~ of an alternate replaceable ~~reservoir or cartridge~~ having a reservoir, all made in accordance with a preferred embodiment of the present invention;

FIGS. 9A – 9D, ~~FIG. 9A, FIG. 9B and FIG. 9C~~ depict, respectively, front, rear and cross-sectional views ~~respectly~~ of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or cartridge~~, at least one replaceable spraying nozzle region, a high voltage generator, a power source, control circuit, trigger and terminals connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention;

FIGS. 10A – 10D, ~~FIG. 10A, FIG. 10B and FIG. 10C~~ depict, respectively, front, rear and cross-sectional views ~~respectly~~ of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or cartridge~~, at least one replaceable spraying nozzle region, a high voltage generator, a power source, control circuit, trigger and terminals connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention;

FIGS. 11A – 11D, ~~FIG. 11A, FIG. 11B and FIG. 11C~~ depict, respectively, front, rear and cross-sectional views ~~respectly~~ of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or cartridge~~, at least one fixed spraying nozzle region, a high voltage generator, power source, control circuit, trigger and terminals

connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention;

~~FIGS. 12A – 12D, FIG. 12A, FIG. 12B and FIG. 12C~~ depict, respectively, front, rear and cross-sectional views respectly of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or~~ cartridge, at least one fixed spraying nozzle region, a high voltage generator, power source, control circuit, trigger and terminals connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention;

~~FIGS. 13A - 13D, FIG. 13A, FIG. 13B and FIG. 13C~~ depict, respectively, front, rear and cross-sectional views respectly of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or~~ cartridge, at least one replaceable spraying nozzle region, a pumping means, a high voltage generator, power source, control circuit, trigger and terminals connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention;

~~FIGS. 14A – 14D, FIG. 14A, FIG. 14B and FIG. 14C~~ depict, respectively, front, rear and cross-sectional views respectly of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or~~ cartridge, at least one replaceable spraying nozzle region, a pumping means, a high voltage generator, power source, control circuit,

trigger and terminals connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention;

~~FIGS. 15A – 15D, FIG. 15A, FIG. 15B and FIG. 15C depict, respectively, front, rear and cross-sectional views respectly of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or~~ cartridge, at least one fixed spraying nozzle region, a pumping means, a high voltage generator, power source, control circuit, trigger and terminals connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention; [[.]]~~

~~FIGS. 16A – 16D, FIG. 16A, FIG. 16B and FIG. 16C depict, respectively, front, rear and cross-sectional views respectly of a hand-held electrostatic spraying device having at least one replaceable ~~reservoir or~~ cartridge, at least one fixed spraying nozzle region, a pumping means, a high voltage generator, power source, control circuit, trigger and terminals connected to a high voltage generator, all made in accordance with a preferred embodiment of the present invention; and[[.]]~~

~~FIGS. 17A – 17D, FIG. 17A, FIG. 17B and FIG. 17C depict, respectively, cross-sectional and partial enlarged cross-sectional views respectly of a hand-held electrostatic spraying device having a pumping means for pneumatically pumping ~~said the~~ material from the reservoir to the nozzle, all made in accordance with a preferred embodiment of the present invention.~~

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A hand-held electrostatic spraying device made in accordance with the first preferred embodiment[[s]] of the present invention is depicted in perspective[[,]] front and rear views in FIGS. 1A - 1B and ~~FIG. 1A~~. The hand-held electrostatic spraying device 10 has an integrated multiple replaceable reservoir or cartridge 20 having multiple reservoirs. The replaceable cartridge 20 is depicted attached to a the hand-held electrostatic spraying device 10.

A ~~multiple~~ replaceable ~~reservoir or~~ cartridge having multiple reservoirs made in accordance with the first preferred embodiment[[s]] of the present invention is depicted in top and cross-sectional views in FIGS. 2A - 2B and ~~FIG. 2A~~. The ~~multiple~~ replaceable ~~reservoir or~~ cartridge 20 shown in FIG. 2AB comprises a plurality of separate ~~electrostatically sprayable material~~ storage regions (reservoirs) 22 for storing electrostatically sprayable material, each of which is contained in a three-dimensional sector of the replaceable ~~reservoir or~~ cartridge. The replaceable ~~reservoir or~~ cartridge 20 has a plurality of material conducting tubes region 40 that is continuously in directly each of which connects directly with the a spraying nozzle 30-region-31. Delivery of an electric charge through a selected terminal 34 to a designated spraying nozzle 30 sublimates the electrostatically sprayable material into many droplets which are focused when the forward extremity of the nozzle-ring configuration 50 is brought within a predetermined distance from of an earthed target to be sprayed.

FIGS. 3A – 3B and ~~FIG. 3A~~ depict a variant[[s]] of the first preferred embodiment ~~in which~~ where the nozzles 30 [[is]] are mounted in fixed relation to the body of the ~~multiple replaceable reservoir~~ cartridge 20 having multiple reservoirs.

In ~~one alternative~~ an alternate embodiment of the invention shown in FIGS. 4A – 4B and ~~FIG. 4A~~, a ~~multiple replaceable reservoir or~~ cartridge 20 comprises a plurality of separate ~~electrostatically sprayable material~~ storage regions 22, each of which is contained in a three-dimensional sector of the replaceable ~~reservoir or~~ cartridge. The storage regions 22 are for storing electrostatically sprayable material. The replaceable ~~reservoir or~~ cartridge 20 has a plurality of material conducting tubes ~~region~~ 40 and a pumping means 70. Each of the plurality of material conducting tubes ~~that~~ is ~~continuously in~~ directly connected with the a spraying nozzle region 30[[1]] ~~in which~~ The pumping of the material by the pumping means is produced in response to operation of actuating means by the user. Delivery of an electric charge through a selected terminal 34 to a designated spraying nozzle 30 sublimates the electrostatically sprayable material into many droplets which are focused when the forward extremity of the nozzle-ring configuration 50 is brought within a predetermined distance from of an earthed target to be sprayed.

In another ~~alternative~~ alternate embodiment of the invention shown in FIGS. 5A – 5B and ~~FIG. 5A~~, a replaceable ~~reservoir or~~ cartridge 20 comprises ~~an electrostatically sprayable material~~ a storage region 22, which is contained in a three-dimensional sector

of the replaceable ~~reservoir or~~ cartridge. The storage region 22 is for storing electrostatically sprayable material. The replaceable ~~reservoir or~~ cartridge 20 has a plurality of material conducting tubes region 40 that is continuously in each of which directly connect with ~~the~~ a spraying nozzle region 30.[[1.]] Delivery of an electric charge through the terminal 34 to spraying nozzles 30 sublimates the electrostatically sprayable material into many droplets which are focused when the forward extremity of the nozzle-ring configuration 50 is brought within a predetermined distance ~~from~~ of an earthed target to be sprayed.

In another ~~alternative~~ alternate embodiment of the invention shown in FIGS. 6A – ~~6B and FIG. 6A~~, a replaceable ~~reservoir or~~ cartridge 20 comprises a ~~electrostatically sprayable material~~ storage region 22, which is contained in a three-dimensional sector of the replaceable ~~reservoir or~~ cartridge. The storage region 22 is for storing electrostatically sprayable material. The replaceable ~~reservoir or~~ cartridge 20 has a material conducting tube ~~region 40~~ and a pumping means 70. The material conducting tube 40 that is continuously in directly connected to ~~with the~~ spraying nozzles 30. ~~region 31 in which~~ The pumping of the material by the pumping means is produced in response to operation of actuating means by the user. Delivery of an electric charge through the terminal 34 to spraying nozzles 30 sublimates the electrostatically sprayable material into many droplets which are focused when the forward extremity of the nozzle-ring configuration 50 is brought within a predetermined distance ~~from~~ of an earthed target to be sprayed.

In yet other alternate embodiments of the present invention, the replaceable ~~reservoir~~ cartridge 20 can ~~also~~ include just one nozzle 30, as ~~showed~~ shown in FIGS. 7A ~~– 7B and FIG. 7A~~, or one nozzle 30 and a pumping means 70, as ~~showed~~ shown in FIGS. 8A – 8B ~~and FIG. 8A~~.

A complete hand-held electrostatic spraying device 10 having ~~multiple~~ a replaceable ~~reservoir or~~ cartridge 20, at least one replaceable spraying nozzle region 33, a high voltage generator 60, a power source 82, a control circuit 80, a trigger 81 and terminals 61 connected to the high voltage generator 60, all made in accordance with the first preferred embodiment of the present invention, is shown in FIGS. 9A -9D, ~~FIG. 9A, FIG. 9B and FIG. 9C~~. The ~~multiple~~ replaceable ~~reservoir or~~ cartridge 20 shown in FIG. 9A – 9D, ~~FIG. 9A, FIG. 9B and FIG. 9C~~ comprises a plurality of separate ~~electrostatically sprayable material~~ storage regions 22, each of which is contained in a three-dimensional sector of the replaceable ~~reservoir or~~ cartridge. The plurality of storage regions 22 are for storing electrostatically sprayable material. The hand-held electrostatic spraying device 10 has multiple terminals 61 that directly connect with a high voltage generator 60. ~~By connecting the~~ During spraying operations when terminals 61 connect to a designated terminal 34 from ~~[[a]]~~ the ~~multiple~~ replaceable ~~reservoir or~~ cartridge 20, ~~delivery of~~ an electric charge is delivered through selected terminals 61 and 34 and sublimates the electrostatically sprayable material into many droplets which are focused when the forward extremity of the nozzle-ring configuration 50 is brought within a predetermined distance ~~from~~ of an earthed target to be sprayed.

In ~~one alternative~~ an alternate embodiment shown in FIGS. 10A – 10D, ~~FIG. 10A,~~
~~FIG. 10B and FIG. 10C,~~ a hand-held electrostatic spraying device 10 having wiring
~~01461~~can be integrated with a replaceable ~~reservoir or~~ cartridge 20 having a single
~~electrostatically sprayable material~~ storage region 22 for storing electrostatically
sprayable material. The hand-held electrostatic spraying device 10 and replaceable
cartridge 20 ~~[[to]]~~ ionize single electrostatically sprayable material stored in storage
region 22 into electrostatically charged droplets during spraying operations.

In ~~another alternative~~ other alternate embodiments shown, respectively, in FIGS.
11A – 11D, ~~FIG. 11A, FIG. 11B FIG. 11C, and FIG. 12A – 12D, FIG. 12A, FIG. 12B~~
~~and FIG. 12C,~~ a hand-held electrostatic spraying device 10 ~~having~~ can have a plurality of
separate ~~electrostatically sprayable material~~ storage regions 22 or ~~having~~ a single
~~electrostatically sprayable material~~ storage region 22. In both embodiments, the storage
regions 22 are for storing electrostatically sprayable material. When the cartridges 20 are
mounted in hand-held electrostatic spraying devices as shown in FIGS. 11D and 12D, the
storage regions are connected to ~~can be integrated with~~ a fixed spraying nozzle region 32
to generate single or multiple materials into electrostatically charged droplets. An electric
charge is applied to each ~~Each~~ material 23 from individual material storage regions 22
~~can be applied an electric charge~~ through ~~[[a]]~~ selected terminals 61 and 34 in a passive
feed arrangement.

In ~~[[a]]~~ further ~~alternative~~ alternate embodiments shown, ~~respectively~~, in FIGS. ~~13A – 13D, FIG. 13A, FIG. 13B and FIG. 13C, and FIGS. 14A – 14D, FIG. 14A, FIG. 14B and FIG. 14C,~~ a hand-held electrostatic spraying devices 10 ~~having~~ can have a ~~plurality of replaceable reservoir or cartridge 20 with a plurality of storage regions 22 or having a single replaceable reservoir or cartridge 20 with a single storage region.~~ In both embodiments, a pumping force can be is applied through a by pumping means 70 to supply material 23 from the material storage regions 22 to the spraying nozzle regions 31 during ~~for further~~ electrostatic spraying operations ~~at nozzle.~~

In ~~yet other~~ still further alternate embodiments of the present invention shown, ~~respectively~~, in FIGS. ~~15A – 15D, FIG. 15A, FIG. 15B, FIG. 15C, and FIGS. 16A – 16D, FIG. 16A, FIG. 16B and FIG. 16C,~~ a hand-held electrostatic spraying devices 10 ~~having a~~ can have a plurality of separate ~~electrostatically sprayable material~~ storage regions 22 or ~~having a single electrostatically sprayable material storage region 22.~~ In both embodiments, the storage regions 22 are for storing electrostatically sprayable material and when cartridges 20 are installed in electrostatic spraying devices 10 the storage regions are connected to ~~can be integrated with a~~ fixed spraying nozzle regions 32 to generate single or multiple materials into electrostatically charged droplets. Each material 23 from individual material storage region 22 ~~can be~~ is supplied to the spraying nozzle regions 31 by a pumping force provided by ~~through~~ a pumping means 70 ~~for further~~ during electrostatic spraying operations ~~at nozzle.~~

In ~~yet other~~ even further alternate embodiments of the present invention shown in FIGS. 17A – 17D, ~~FIG. 17A, FIG. 17B and FIG. 17C,~~ a hand-held electrostatic spraying devices 10 ~~having~~ can have a plurality of separate ~~electrostatically sprayable material~~ storage regions 22 or ~~having~~ a single ~~electrostatically sprayable material~~ storage region 22. The storage regions 22 are for storing electrostatically sprayable material, and when cartridges 20 are installed in electrostatic spraying devices 10 the storage regions 22 are connected to ~~can be integrated with~~ a fixed spraying nozzle regions 32 to generate single or multiple materials, respectively, into electrostatically charged droplets. Each material 23 from individual material storage region 22 can be supplied to the spraying nozzle region 31 through a pumping means 70 (such as, for example, a pneumatic pump). The pumping means 70 is actuated by ~~having~~ a trigger 81 ~~actuated piston 91~~ to pneumatically ~~pumping said~~ the electrostatically sprayable material 23 from the material storage region 22 to the spraying nozzle region 32 ~~for further~~ during electrostatic spraying operations. ~~at nozzle.~~